CLAIMS

We claim:

1.   A docking device capable of synchronizing a host computer and a portable

communications device when the communications device is docked in the docking

device, wherein the docking device provides cordless communication between the

portable communications device and the host computer without docking of the

portable communications device in the docking device.

2.   The docking device of claim 1, wherein the docking device comprises:

an antenna for transmitting and receiving radio signals to and from the

portable communications device; and

a signal processor, coupled to the antenna, for processing the radio signals

to provide the cordless communication.

3.   The docking device of claim 2, wherein the antenna has an operational range

of about 100 to 300 feet.

4.   The docking device of claim 2, wherein the signal processor includes a

transceiver and an interface module for communicating with the host computer.

5.   The docking device of claim 2, further comprising:

a connection for physically and electrically connecting the docking device to the host computer, wherein the radio signals processed by the signal processor are delivered to the host computer through the connection.

6.   The docking device of claim 2, wherein the signal processor processes the radio signals using predetermined encryption and decryption keys.

7.   The docking device of claim 6, wherein the predetermined encryption and decryption keys are same as those used in the portable communications device.

8.   The docking device of claim 2, wherein data synchronization between the host computer and the portable communications device is performed using the antenna without the portable communications device docked in the docking device.

9.   The docking device of claim 1, wherein the portable communications device is a personal digital assistant (PDA) device.

10.   The docking device of claim 1, wherein the portable communications device is a telephone providing personal digital assistant (PDA) functions.

11.   A personal digital assistant (PDA) device for use with a host computer and a docking device connected to the host computer, the docking device capable of synchronizing the host computer and the PDA device when the PDA device is docked in the docking device, the docking device including an antenna for cordless communication, the PDA device comprising:

an antenna for cordlessly communicating with the antenna of the docking device; and

a signal processor, coupled to the antenna of the PDA device, for processing signals received from the antenna, wherein cordless communication is established between the PDA device and the host computer through the antenna of the PDA device and the antenna of the docking device.

12.   The PDA device of claim 11, wherein the antenna of the PDA device has an operational range of about 100 to 300 feet.

13.   The PDA device of claim 11, wherein the signal processor processes the signals using predetermined encryption and decryption keys.

14.   The PDA device of claim 13, wherein the predetermined encryption and decryption keys are same as those used in the docking device.

15.   The PDA device of claim 11, wherein data synchronization between the host computer and the PDA device is performed using the antennas without docking of the PDA device in the docking device.

16.   The PDA device of claim 11, wherein the PDA device provides telephone functions.

17.   A computer for establishing cordless communication with at least one personal digital assistant (PDA) using a docking device, the docking device capable of synchronizing the computer and the PDA when the PDA is docked in the docking device, the computer comprising:

a processor for providing to the docking device at least one set of security keys to be used in the cordless communication with the PDA; and

an interface, coupled to the processor, for interfacing communication between the processor and the docking device, wherein the cordless communication is established between the computer and the PDA through the docking device without docking of the PDA in the docking device.

18.   The computer of claim 17, wherein the processor maintains a list of different sets of security keys assigned to a plurality of PDAs, and selectively provides to the

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docking device one or more sets of the security keys from the list, whereby the

computer can selectively communicate with the PDAs.

19.   The computer of claim 17, wherein the processor maintains one set of

security keys commonly assigned to a plurality of PDAs, and provides the set of

security keys to the docking device, whereby the computer can simultaneously

communicate with all of the PDAs.

20.   The computer of claim 17, wherein the computer maintains a list of PDA

identifiers for identifying different PDAs, and uses the list to relay any

communication from one PDA to another PDA through the docking device.

21.   A communication system for establishing cordless communication in a

computing environment, the system comprising:

        a host computer;

        at least one portable communications device having an antenna for cordless

communication with the host computer;

        a docking device coupled to the host computer and having an antenna for

communicating with the antenna of the portable communications device, whereby

cordless communication is established between the host computer and the portable

communications device through the docking device without docking of the portable

communications device in the docking device.

22.   The system of claim 21, wherein at least one of the antenna of the docking

device and the antenna of the portable communications device has an operational

range of about 100 to 300 feet.

23.   The system of claim 21, wherein the docking device further includes a

transceiver and an interface module for communicating with the host computer.

24.   The system of claim 23, wherein the docking device further includes a

connection for physically and electrically connecting the docking device to the host

computer.

25.   The system of claim 23, wherein the interface module of the docking device

performs data transmission and data reception using predetermined encryption and

decryption keys.

26.   The system of claim 21, wherein the portable communications device processes signals to and from the antenna of the docking device using predetermined encryption and decryption keys.

27.   The system of claim 26, wherein the docking device processes signals to and from the antenna of the portable communications device using the predetermined encryption and decryption keys.

28.   The system of claim 26, wherein the predetermined encryption and decryption keys include user data.

29.   The system of claim 21, wherein the portable communications device is a personal digital assistant (PDA).

30.   The system of claim 21, wherein the portable communications device is a telephone providing personal digital assistant (PDA) functions.

31.   The system of claim 21, wherein the docking device synchronizes the host computer and the portable communications device when the portable communications is docked in the docking device.

32.　　The system of claim 21, wherein the host computer comprises:

　　　　a processor for providing to the docking device at least one set of security

keys to be used in the cordless communication; and

　　　　an interface, coupled to the processor, for interfacing communication

between the processor and the docking device.

33.　　The system of claim 21, wherein the computer maintains a list of different

sets of security keys assigned to a plurality of portable communications devices,

and selectively provides to the docking device one or more sets of the security keys

from the list, whereby the computer can selectively communicate with the portable

communications devices.

34.　　The system of claim 21, wherein the computer maintains one set of security

keys commonly assigned to a plurality of portable communications devices, and

provides the set of security keys to the docking device, whereby the computer can

simultaneously communicate with all of the portable communications devices.

35.　　The system of claim 29, wherein the computer maintains a list of PDA

identifiers for identifying different PDAs, and uses the list to relay any

communication from one PDA to another PDA through the docking device.

36.   A method for establishing cordless communication between a host computer and at least one portable communications device using a docking device, wherein the docking device is connected to the host computer and capable of synchronizing the portable communications device and the host computer when the communications device is docked in the docking device, the method comprising:

communicating a signal between the host computer and the portable communications device through the docking device without docking of the portable communications device in the docking device.

37.   The method of claim 36, wherein the docking device includes a first antenna and the portable communications device includes a second antenna, and wherein the communicating step communicates the signal through the first and second antennas.

38.   The method of claim 36, wherein the communicating step communicates the signal using predetermined security keys.

39.   The method of claim 36, wherein the communicating step communicates the signal using Spread Spectrum technologies.

40.   The method of claim 36, wherein the portable communications device is a personal digital assistant (PDA).

41.   The method of claim 40, wherein the communicating step communicates the signal from the host computer to a plurality of PDAs, simultaneously, using a set of predetermined security keys commonly assigned to the PDAs.

42.   The method of claim 40, wherein the communicating step selectively communicates the signal from the host computer to a plurality of PDAs using different sets of predetermined security keys assigned to the PDAs.

43.   The method of claim 40, wherein the PDA provides telephone functions.

44.   The method of claim 36, further comprising:

relaying communication from one portable communications device to another portable communications device using a list of device identifiers for identifying different portable communications devices.

45.   A computer program product embodied on computer readable media readable by a computing device, the product comprising:

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computer-readable program code means for providing personal digital assistant (PDA) functions to a portable communications device; and

computer-readable program code means for configuring a host computer and the portable communications device to perform cordless communication each other through a docking device without requiring docking of the portable communications device in the docking device.

46.   The product of claim 45, further comprising:

computer-readable program code means for generating a set of security keys to be used in the cordless communication.

47.   The product of claim 46, further comprising:

computer-readable program code means for providing data synchronization between the host computer and the portable communications device when the communications device is docked in the docking device.